In August, 1888, I collected on one occasion about a dozen examples of Prophysaon andersoni J. G. Cp., near the San José reservoir, above Lexington, Santa Clara County. While taking measurements of the living specimens, before putting them into alcohol, I noticed in several a contraction about two-thirds of the length from the head. This appeared as an indented line completely encircling the body. Upon handling the slugs to examine this phenomenon more closely, the line became deeper and in the case of two of the specimens the tail dropped off, almost as readily as the ray of the so-called "brittle" starfish. Only with mature slugs did this happen. The young, constituting the majority of those captured, showed no signs of shedding their tails. Perhaps they had further use for them. The discarded appendages showed vitality for a short time only, when they went to join their owners in my collecting bottle.

Again, only a few weeks ago, I collected on the northern boundary of Oakland some Prophysaon hemphilli Bl. & Binn. which together with Ariolimax Californicus and one of our smaller species of Ariolimax, inhabit a marshy spot near the Bay shore. At home the next day when taking my captives out of the can into which they had been put, I noticed the same contraction taking place in the specimens of Prophysaon, but in no case did it proceed to dismemberment. I put them into alcohol and in every one of them, seven in all, there is a well-marked, depressed line about the body near the tail, the body being attenuated behind the constriction, the whole looking very much as a soft iron wire looks just before it breaks under a tensile strain. In the largest specimen which measures 34 mm. contracted in alcohol, the depressed line is 8 mm. from the tail and is marked across the foot by a black line, as if the tissues were already almost severed. When collected there was no constriction visible.

In no other case have I observed this dropping of the tail among slugs, which seems as far as recorded to be confined to species of the genus Prophysaon. Here are the facts; who can explain them?

NOTES ON SOME NORTH AMERICAN PUPIDÆ WITH DESCRIPTIONS OF NEW SPECIES.

BY DR. V. STERKI.

On my request, Mr. H. Hemphill, of San Diego, Cal., was so kind as to forward to me, for examination, all the North American

Pupidæ in his possession. Among them there are a number of very interesting forms and varieties, as well as some species new to our fauna.

Pupa californica, Rowell.[1]

From Mr. Hemphill's material we learn that this species is variable to a very exceptional degree, so that the extreme forms appear to be, or to belong to, quite different species, or even genera. And it is more than probable that new specimens from other places will bring to light still more forms. The lots under consideration are the following:

1. *From San Francisco.* Several hundred examples of the well known form everywhere in collections. It may be regarded as typical, yet is somewhat variable in itself, as to shape of the shell and number and size of the lamellæ; many specimens are more or less oblong or obovate, while the majority are rather cylindrical; in some, the superior palatal lamella is very small and in a few even entirely wanting, while the apertural, columellar and inferior palatal seem to be constant, the first and last of them generally well formed, while the columellar may be small. In one specimen I saw a tiny but distinct supra-apertural, and in very many there is a small, nodule-like supra-apertural, close to the middle of the (outer side of the) apertural. So far I had thought this latter to be a special, distinguishing character of *P. rowelli*, Newc.

2. *From San Clemente Isl.* A little smaller and generally more cylindrical than the type; a part are even long cylindrical, having the appearance of an *Isthmia*. The coloration is somewhat paler, and the lamellæ are well formed—*elongata*. Among the more than 100 specimens there were 5 different from the balance, and ranging with the following form.

3. *From Santa Catalina Isl.* All the examples (about 200) are of quite a peculiar form: small, rather short, pale horn colored; shell thin, delicate; rib-like striæ less numerous and relatively larger; the whorls are less high, which gives the shell a different appearance. All lamellæ are present and well formed, especially the apertural. The shell is nearly exactly of the size and shape of

[1] Although I had ranged this species, with corpulenta, etc., among *Vertigo*, I prefer here leaving it once in the old place, on account of the varieties being so different from what we consider to be true *Vertigo*.

Vertigo bollesiana Morse, from New York or Ohio,[1] and also the lamellæ are much alike. One peculiarity is that in about one-third of the examples a part of the shell is wanting, always on the side of the aperture, so that 3 or even 4 whorls are opened. This can hardly be accidental, and probably that part of the thin shell is worn off by friction in moving. I would propose to name this form *var. catalinaria;* others might regard it as a species, as it appears to be rather well defined, and distinct from the other forms.

(*To be continued.*)

AMERICAN ASSOCIATION OF CONCHOLOGISTS.

JUNE 4, 1890.

John H. Campbell, President, Philadelphia. *Cypraeidae.*

Charles W. Johnson, Secretary, Philadelphia. *South American Mollusca.*

Frank C. Baker, Philadelphia, Pa. *Muricidae.*

Rev. W. M. Beauchamp, Baldwinsville, N. Y. *Land and Fresh Water Shells of North America.*

Theodore G. Brinton, Philadelphia, Pa. *Mitridae.*

J. J. Brown, M. D., Sheboygan, Wis.

F. C. Browne, Framingham, Mass. *Nassidae and Strophia.*

H. F. Carpenter, Providence, R. I. *Shell-bearing Mollusca of Rhode Island.*

Prof. Wm. B. Clark, Baltimore, M. D. *Eocene Mollusca.*

Thomas C. Curry, Connersville, Ind. *Succineidae.*

Wm. H. Dall, Washington, D. C. *Abyssal Mollusks.*

Rev. A. Dean, Muncy, Pa. *Fusidae.*

Geo. W. Dean, Kent, Ohio. *Helicidae.*

James M. Delaney, Rochester, N. Y.

L. B. Elliott, Iowa City, Iowa. *Dentition.*

Frank J. Ford, Wichita, Kan. *Papidae.*

John Ford, Philadelphia, Pa. *Olividae.*

T. Marshall Fry, Syracuse, N. Y. *Unionidae.*

Uly. S. Grant, Minneapolis, Minn. *Land and Fresh Water shells of North America.*

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[1] The New York and Ohio specimens of V. bollesiana are larger and more distinctly striate than those from New England and Canada.